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MOTOR VEHICLE STORAGE APPARATUS

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(56) Prior Art Documents
AU 69681/87 B60R 9/04
AU 75471/81 B60R 9/04
AU 62120/80 B60R 9/04

(57) Claim

1. Motor vehicle roof storage apparatus comprising a pair of roof attachment brackets removably attached to the roof of a motor vehicle, said brackets being substantially parallel to the longitudinal sides of the motor vehicle and having an underside shape to fit contour of said roof, a base plate removably securable to said brackets, a plurality of storage containers having lockable containers rigidly abutting said base plate, wherein said storage containers have lockable covers,

wherein said brackets have a channel means whereby at least two bolts fit into channel means and are secured therein, and said at least two bolts interact with apertures in said base plate and said storage containers and thereby are used to attach the base plate and the storage containers to the brackets.

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COMPLETE SPECIFICATION

(ORIGINAL)

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Complete Specification for the invention entitled:

Motor Vehicle Storage Apparatus

The following statement is a full description of this invention, including the best method of performing it known to me/us

- ABSTRACT -

Roof storage apparatus comprising a pair of brackets mounted to the roof of a motor vehicle. The brackets are mounted parallel to the side of the vehicle. A substantially rectangular flat base is able to be bolted onto the pair of brackets to form a carrying platform. If required a storage container is similarly bolted onto said base. The storage container is preferably shaped aerodynamically to prevent drag and has doors which are able to be locked. The storage apparatus can be removed from the roof of the motor vehicle when not required for use.

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The present invention relates to storage containers, and in particular, to a set of storage containers locatable on the roof of a motor vehicle.

In the case of sedan and station wagon motor vehicles, there is limited storage space, either in the boot of the sedan or the carrying area of the station wagon.

If more luggage or the like is to be carried or stored on the motor vehicle, roof bars or a roof rack can be attached to the roof. In these cases, the luggage is left open to the elements which in some instances can be unsatisfactory considering the nature of the particular luggage being carried.

Another disadvantage is that the aerodynamics of a loaded roof in the above mentioned manner detracts from the performance of the vehicle.

A variety of luggage compartments have been adapted to be locatable on roof racks which are attached to the rain gutters of the roof of the motor vehicle. However, these are unsatisfactory if the load to be carried is great as the load is supported by usually not very strong roof bars or racks.

It is an object of the present invention to provide improved roof storage apparatus which substantially overcomes or ameliorates the above mentioned disadvantages.

According to one aspect of the present invention there is disclosed motor vehicle roof storage apparatus comprising a pair of roof attachment brackets removably attached to the roof of a motor vehicle, said brackets being substantially parallel to the longitudinal sides of the motor vehicle and having an underside shape to fit contour of said roof, a base plate removably securable to said brackets, a plurality of storage containers having lockable containers rigidly abutting said base plate, wherein said storage containers have lockable covers,

wherein said brackets have a channel means whereby at least two bolts fit into channel means and are secured therein, and said at least two bolts interact with apertures in said base plate and said storage containers and thereby are used to attach the base plate and the storage containers to the brackets.

Some embodiments of the present invention will now be described with reference to the drawings in which:

Fig. 1 is an exploded perspective view of the storage apparatus of a preferred embodiment,

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Fig. 2 is a side elevational view of the storage containers in Fig. 1,

Fig. 3 is a rear end view of the containers of Fig. 1 illustrated with the doors of the container open,

Fig. 4 is a transverse cross-sectional view of the bracket of the
5 apparatus of Fig. 1,

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Fig. 5 is a lateral cross-sectional view of the bracket of Fig. 4,

Fig. 6 is a plan view of the base of the apparatus of Fig. 1,

Fig. 7 is a detailed view of slots in the bracket of Fig. 4,

Fig. 8 is a side elevational view of a second embodiment of the

5 container of the apparatus,

Fig. 9 is a perspective view of a bracket used to attach the apparatus of Fig. 1 to the roof of a motor vehicle, and

Fig. 10 is a schematic diagram showing a template being formed to shape the bracket of Fig. 7.

10 The apparatus 21 of the preferred embodiment, comprises an aerodynamically shaped container 22, a base 23 and two mounting brackets 24. The mounting brackets 24 are fixed longitudinally along the length of the roof 25 of the motor vehicle (not illustrated) the brackets 24 have a channel 26 into which a bolt 27 can be inserted to attach the base 23 and containers 22 to the brackets 24.

The brackets 24 each include a length of rubber 28 or similar material and an aluminium extrusion 29 which fits over the length of rubber 28. The rubber 28 and extrusion 29 have corresponding holes 30 through which a bolt 31 is inserted. The bolt 31 fixedly attaches the brackets 24 to the roof 25 of the motor vehicle, the brackets 24 are either permanently attached or can be detached. The aluminium extrusion 29 has slots 32 to allow any rain water which is within the cavity of the bracket 24 to drain out.

An alternate method of attaching the brackets 24 to the roof 25 is by welding the brackets 24 or a plurality of pins (not illustrated) to the roof 25 whereby the brackets slip over the pins and lock on.

The base 23 is bolted to the brackets 24 by bolts 27. The base in this case is spaced from the roof 25, by the width of the brackets 24. The container 22 is also bolted onto the base 23 when required for use. In this case the removal of the base 23 and the container 22 is easily accomplished.

The container 22 of preferred embodiments as illustrated in the drawings have doors 33 which have gas lift cylinders 34 to open the doors 33. The doors 33 are hinged from the top of the container 22, thus access is easily obtained to the exterior of the containers 22.

Due to the curved nature of the roof 25 of the motor vehicle the brackets 24 will have to have their lower sides shaped to contour the curved surface. Naturally all different motor vehicles are shaped

differently and therefore different shaped brackets would be required for each application of the roof storage apparatus.

Illustrated in Fig. 10 is a template 41. The template 41 comprises a plate 42 having a plurality of holes 45 through which a plurality of teeth 43 pass through perpendicularly. The holes 45 are located all along both longitudinal sides 44 of the plate 42. The teeth 43 are slidable in the holes 45 and can be locked into position when required.

In use the template 41 is placed on the roof 25 of the motor vehicle. The ends 46 of the teeth 43 contacting the roof 25 form the contour of the roof 25. The teeth 43 are then locked into position by screws 47 which bind the template 41 together not allowing movement of the teeth 43. The template 41 is placed over the brackets 24 which are to be shaped to thus give an outline of the contour of the roof 25. The brackets 24 are then shaped to fit the roof 25.

The foregoing describes only some embodiments of the present invention, and modifications obvious to those skilled in the art can be made thereto without departing from the scope of the present invention.

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The claims defining the invention are as follows:

1. Motor vehicle roof storage apparatus comprising a pair of roof attachment brackets removably attached to the roof of a motor vehicle, said brackets being substantially parallel to the longitudinal sides of the
5 motor vehicle and having an underside shape to fit contour of said roof, a base plate removably securable to said brackets, a plurality of storage containers having lockable covers rigidly abutting said base plate, wherein said storage containers have lockable covers,
wherein said brackets have a channel means whereby at least two
10 bolts fit into channel means and are secured therein, and said at least two bolts interact with apertures in said base plate and said storage containers and thereby are used to attach the base plate and the storage containers to the brackets.
2. Apparatus as claimed in claim 1, wherein said brackets have
15 rubber or plastics inserts to absorb the pressure of loaded storage apparatus.
3. Apparatus as claimed in any one of the preceding claims, wherein said brackets have slots whereby any rainwater collected by said brackets can drain out.
- 20 4. Apparatus as claimed in any one of the preceding claims, wherein containers have gas lift cylinders which are used to open the lockable doors, which are hinged upwardly.
5. Motor vehicle roof storage apparatus substantially as described with reference to the accompanying drawings.

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DATED this FOURTEENTH day of JUNE 1991
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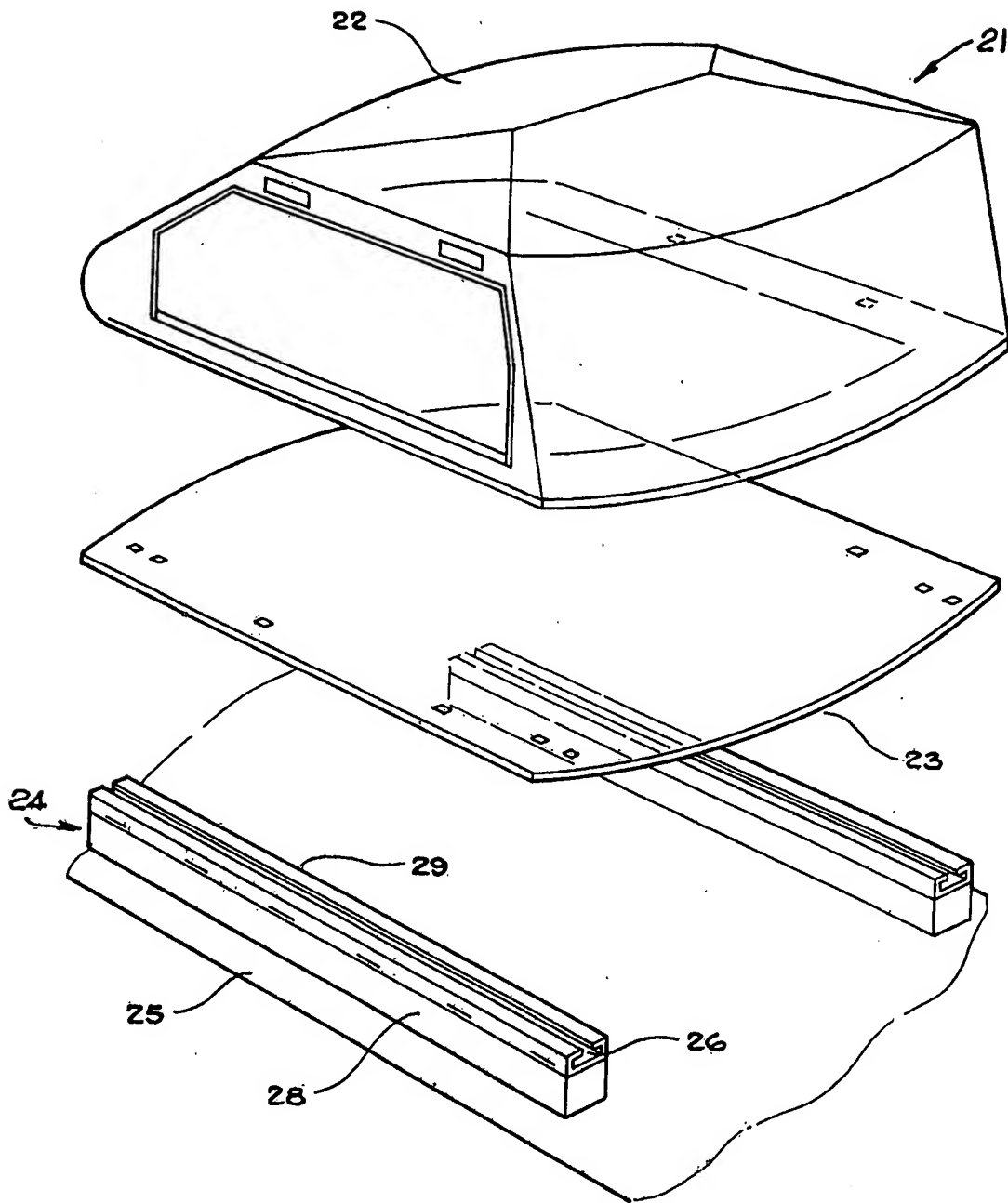


FIG. 1.

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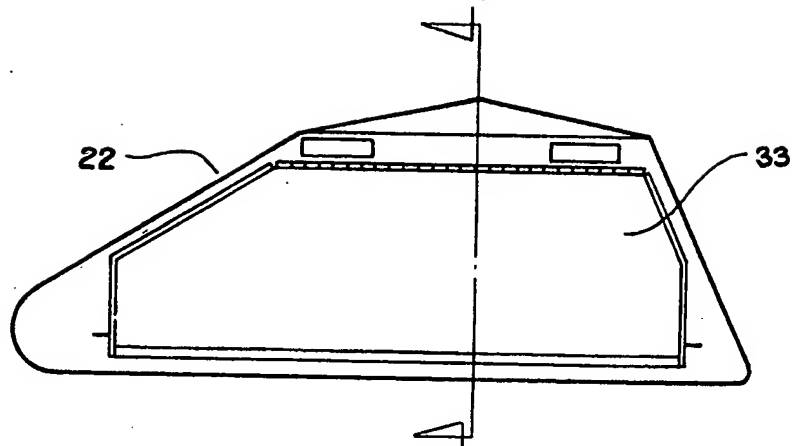


FIG. 2.

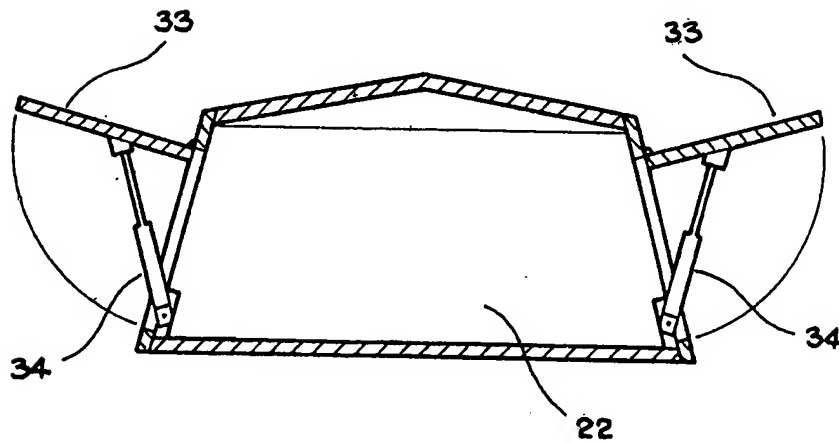
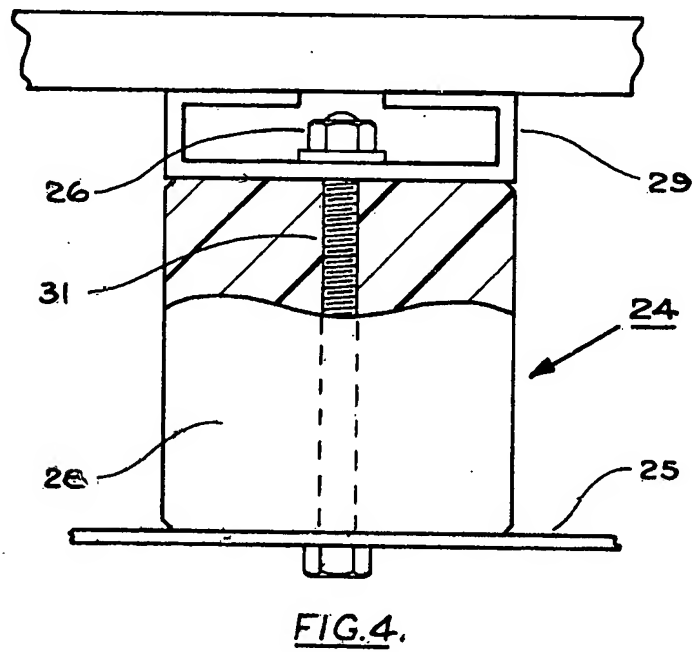
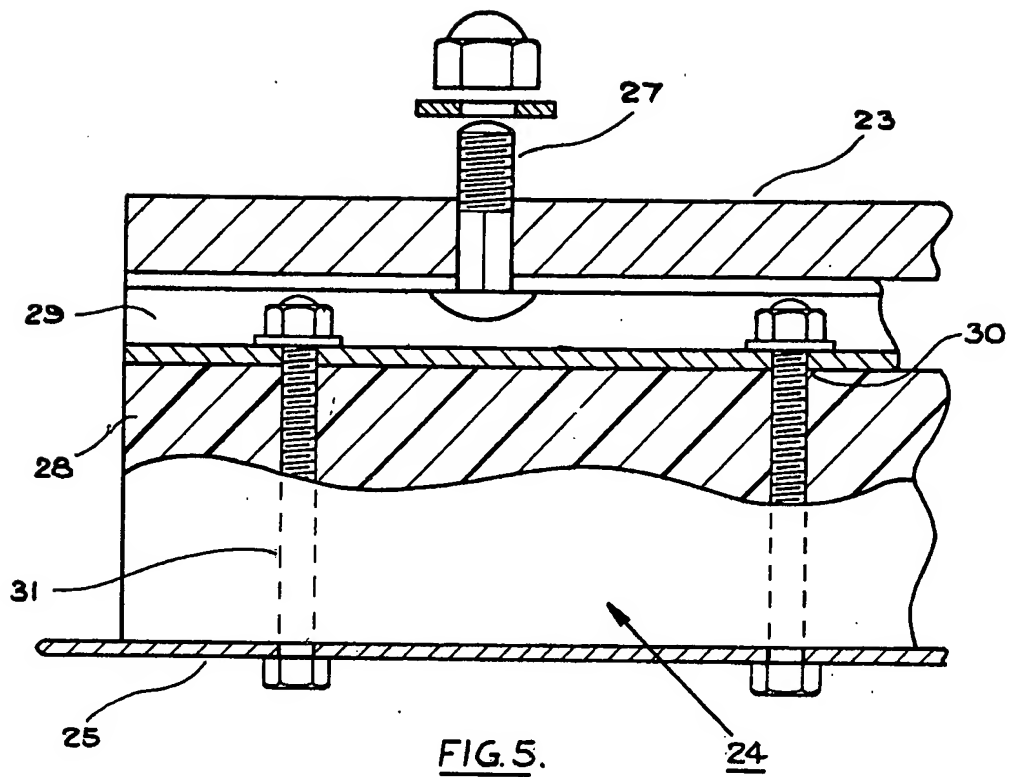


FIG. 3.

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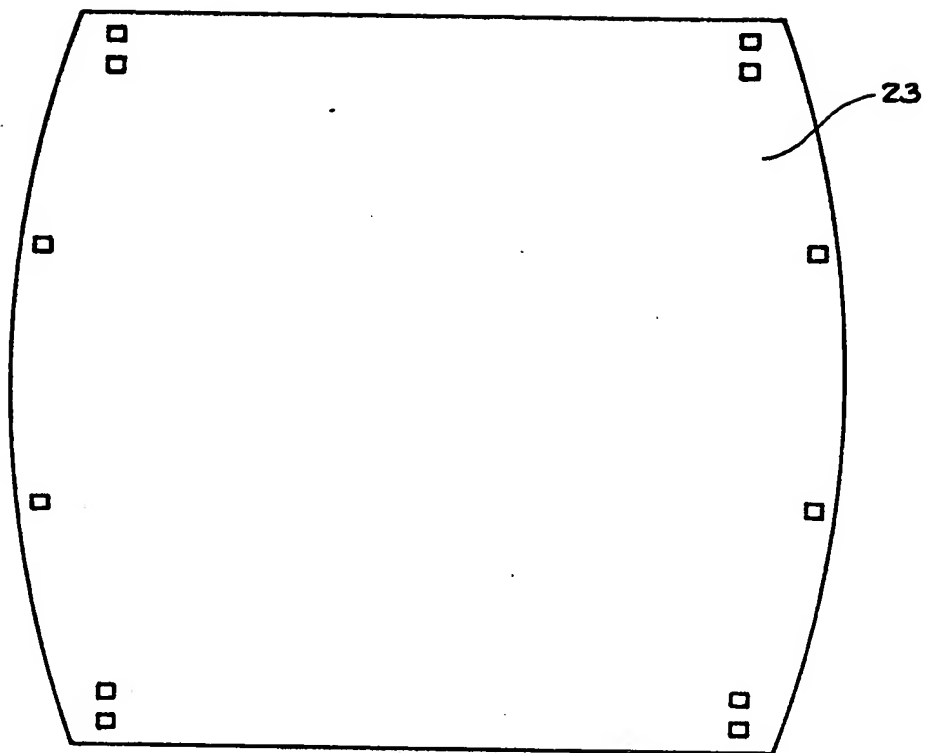


FIG. 6

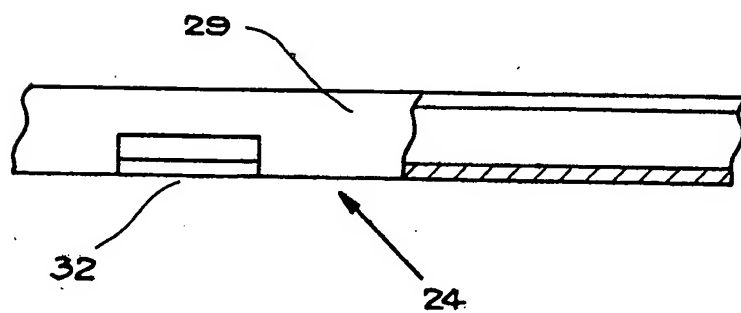


FIG. 7

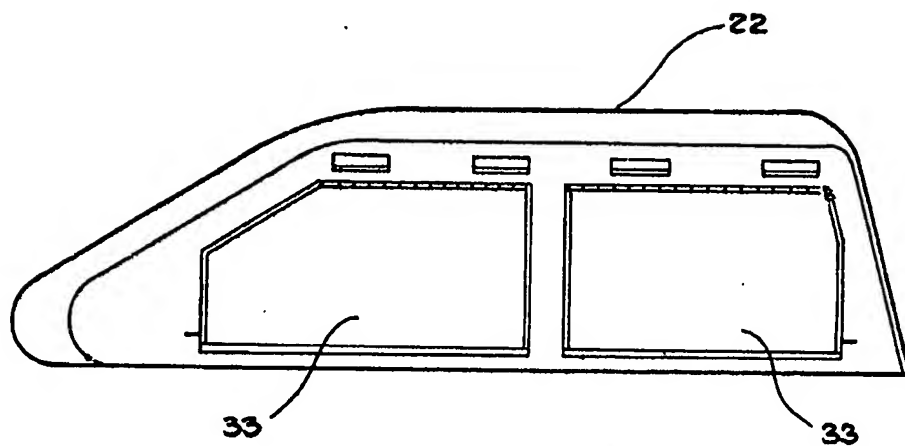


FIG. 8.

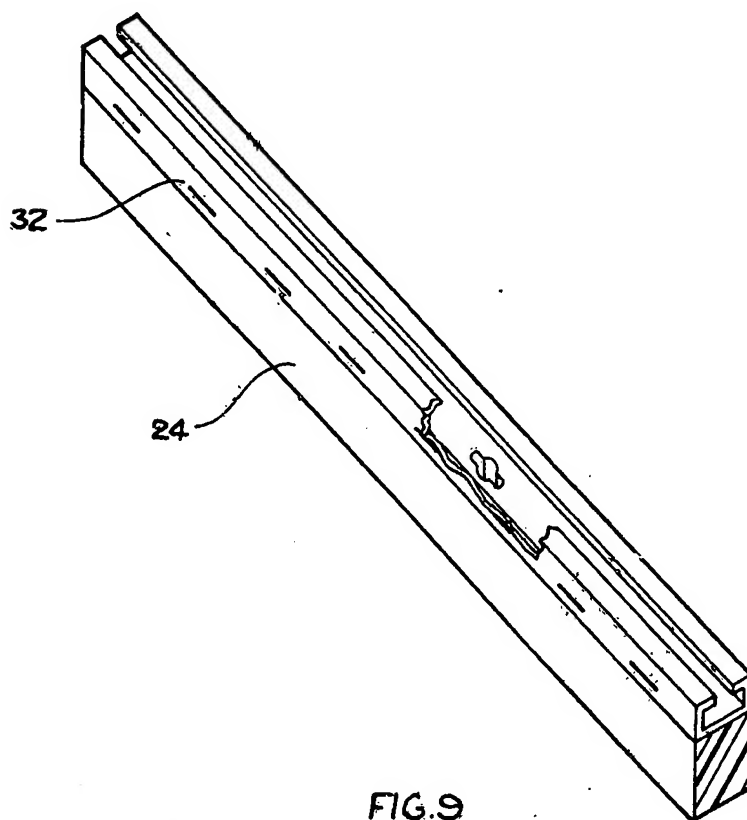


FIG. 9

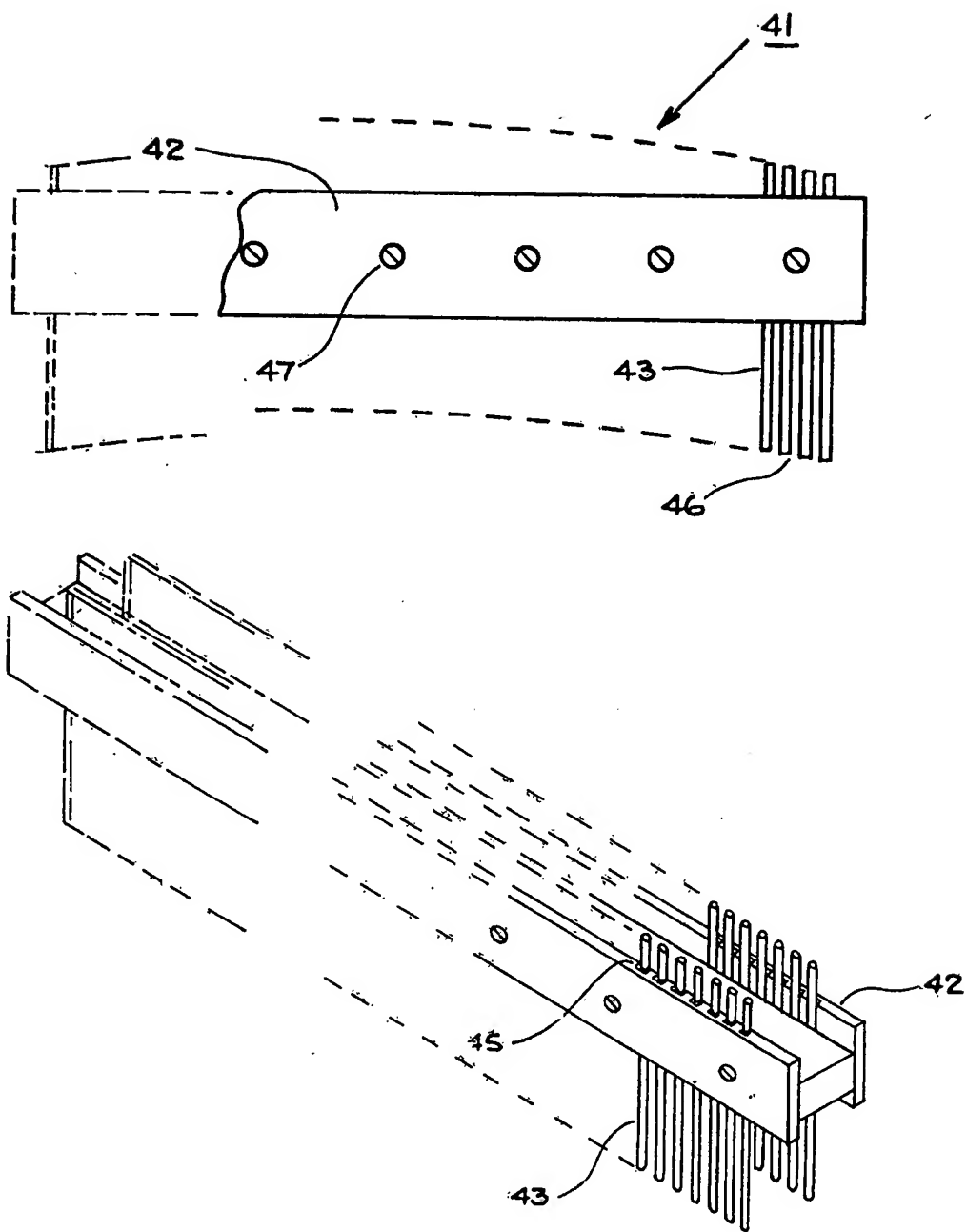


FIG.10.